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NOTES ON GEOGRAPHIC DISTRIBUTION

Range extension of *Anoura fistulata* Muchhala, Mena and Albuja, 2005 (Chiroptera: Phyllostomidae) in Peru

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ABSTRACT: *Anoura fistulata* Muchhala, Mena and Albuja, 2005, is distributed from Colombia southward to Bolivia. In Peru, *A. fistulata* is known from the department of San Martín located in North. Here, we report the first record of *A. fistulata* to the department of Puno, southern Peru. This is the southernmost reported occurrence of *A. fistulata* in Peru, and contributes to knowledge of the distribution of this recently described species.

Anoura fistulata Muchhala, Mena and Albuja, 2005 is a medium-sized species of the genus *Anoura*. It is characterized by the presence of a snout with the inferior lip longer than the superior, an extremely long tongue and an interfemoral membrane with an inverted V shape (Muchhala *et al*. 2005). The IUCN includes this species in its Data Deficient category, which indicates the importance of generating more information about its geographical distribution.

A. fistulata was previously considered to be an Ecuadorian endemic, but its range has recently been extended by several records. Mantilla-Meluk and Baker (2008) and Mantilla-Meluk *et al.* (2009) reported the presence of *A. fistulata* in Colombia, and Pacheco *et al.* (2009) mentioned the occurrence of the species in Peru based on an individual collected in the department of San Martin (MUSM 24363). An ongoing revision of the species indicates that several specimens have been located in the department of San Martín in Peru (Pacheco and Cadenillas, pers. comm.). In Bolivia, Aguirre *et al.* (2010) reported the presence of *A. fistulata* in the department of Chuquisaca.

Our individual of *Anoura fistulata* was captured in the village of Chacaneque, Ollachea district, Carabaya province, Puno department (13°39'42" S, 70°28'56" W, Figure 1), at the altitude of 1,690 m. This area is part of a mid-terrace physiographic unit, and the surrounding physiographic units are high terraces and alluvial valley bottoms. The specific habitat corresponds to the Wet Forest Subtropical (bmh-S) Life Zone (Holdridge 1967), which is characterized by average temperatures of 18 to 25°C, and annual rainfall over 1,200 mm. The collection site is characterized by abundant grass and shrub cover, due to its proximity to the river, with the dominant species being *Baccharis latifolia*, a woody shrub. There are no hardwood trees, and the substrate is largely composed of river rocks.

The specimen of *A. fistulata* was an adult male with non-scrotal testicles captured with a mist net during nocturnal sampling. It was collected by Paola Gárate (code PGB 005) during a field expedition carried out in the late dry season in October 2010, as part of an environmental impact study for PUKUNI Consultores Closed Corporation, (permit N° 0416-2010-AG-DGFFS-DGEFFS issued to PUKUNI). *Sturnira oporaphilum* was caught in the same mist net.

FIGURE 1. Location of the report of *Anoura fistulata* presented in this study and other studies in Peru and Bolivia.

Table 1. Measurements (mm) taken of the specimen collected in comparison to the ranges reported in other studies. SD = Standard deviation, n = sample size.

MEASUREMENTS	Muchhala *et al.* (2005) Mean ± SD (range) n	Mantilla-Meluk and Baker (2008)	Mantilla-Meluk *et al.* (2009)			THIS STUDY
Forearm length	37.8 ± 1.33 (35.0-40.0) 19	37.8	38.66	36.89	36.80	37.3
Total skull length	24.1 ± 1.34 (22.9-26.1) 6	24.08	24.99	24.32	23.62	23.6
Condylobasal length	23.5 ± 1.27 (22.3-25.1) 6	23.46	24.44	23.73	22.77	23.1
Zygomatic breadth	9.8 ± 0.45 (9.4-10.3) 3	9.89	-	10.08	-	10.1
Postorbital breadth	4.7 ± 0.26 (4.4-5.1) 6	4.83	4.53	5.00	4.77	5
Braincase breadth	9.4 ± 0.17 (9.29.7) 6	9.44	9.26	9.68	8.93	9.3
Palatal length	12.5 ± 1.08 (11.3-14.4) 6	12.8	13.93	13.02	12.23	13
Maxillary tooth-row length	8.9 ± 0.52 (8.1-9.6) 6	8.58	9.64	7.78	8.55	8.7
Mandible length	17.7 ± 1.09 (16.5-19.3) 6	17.13	13.87	17.68	16.71	16.9
Mandibular tooth-row length	9.0 ± 0.62 (8.4-9.8) 6	8.95	9.89	9.55	9.33	9.1
Breadth across molar	5.5 ± 0.38 (4.9-5.9) 6	5.47	5.86	5.16	4.19	5.6
Breadth across canines	4.4 ± 0.16 (4.2-4.6) 6	4.28	4.16	-	3.09	4.5

Figure 2. Live male *Anoura fistulata* specimen (MUSA 9925) collected in Ollachea, Carabaya, Puno, Peru.

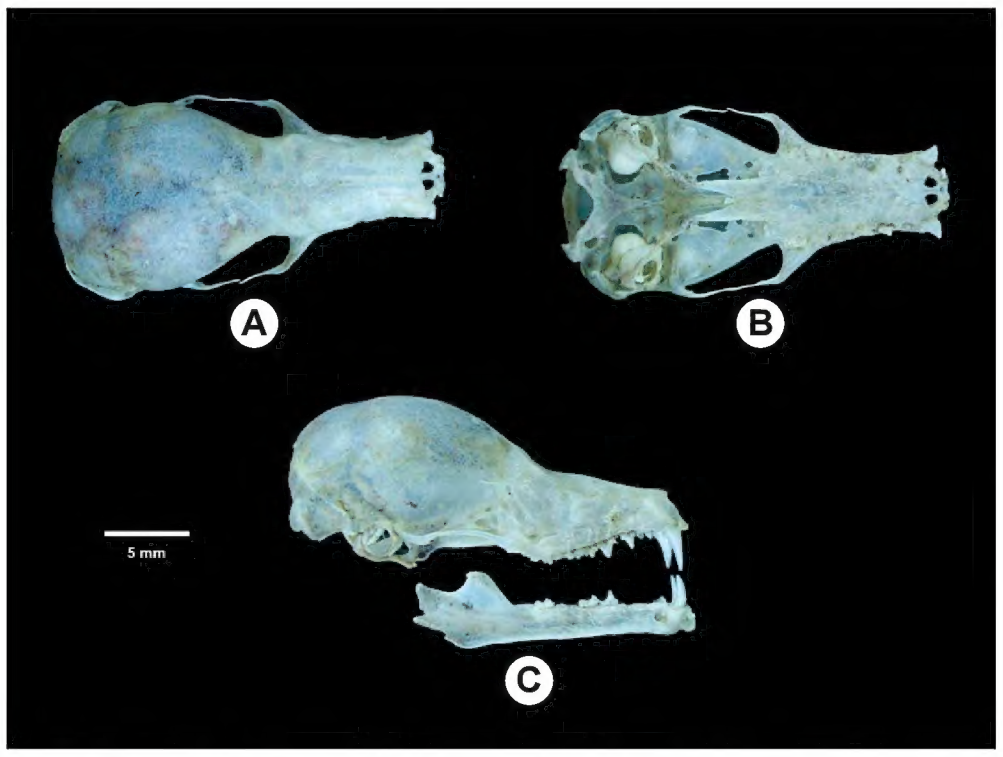

Figure 3. Skull of a male *Anoura fistulata* specimen (MUSA 9925) collected in Ollachea, Carabaya, Puno, Peru.

The voucher specimen was preserved in alcohol with the skull removed, and it is catalogued at the Natural History Museum of San Agustin University, Arequipa (MUSA 9925). External and cranial measurements in millimeters taken along with data from other specimens (Muchhala *et al.* 2005, Mantilla-Meluk and Baker 2008, and Mantilla-Meluk *et al.* 2009) are provided in the Table 1. The live specimen is shown in Figure 2, and its skull is shown in Figure 3.

The individual reported here represents the second record for Peru and the first record of this species for the department of Puno. This extends the geographical distribution of the species in Peru, since the last and closest documented record is from the department of San Martin (Pacheco *et al.* 2009), at an aproximate distance of 982 km.

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